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EXAMINER				
ZERVIGON, RUDY				
ART UNIT		PAPER NUMBER		
1792				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/087,558

**Applicant(s)**

DANDO ET AL.

**Examiner**

Rudy Zervigon

**Art Unit**

1792

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 45-47, 49-51 and 54-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 45-47, 49-51 and 54-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/808)  
Paper No(s)/Mail Date 9/24/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**zDETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 45-47, 49-51, and 54-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srivastava; Asecm K. (US 6,225,745 B1) in view of Onda; Shinzaburo et al. (US 5,395,482 A). Srivastava teaches Srivastava's gas stream on Srivastava's body (10b; Figure 1b; column 3; lines 20-44) feeding to Srivastava's purge gas inlet through a single-inlet valve (any one of 36; Figure 1b), and a structure (51) on the body (10b; Figure 1b; column 3; lines 20-44) configured to mount the body (10b; Figure 1b; column 3; lines 20-44) directly to a substrate processing chamber (16; Figure 1b) with the plenum chamber (inherent - needed to convey gases in 38) outlet (51) proximate to and connected with a substrate processing chamber (16; Figure 1b) inlet (51) – claim 45. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) wherein Srivastava's structure (interface box between 34 and 38; Figure 1b) is configured to mount Srivastava's body (10b; Figure 1b; column 3; lines 20-44) to a substrate processing chamber (16; Figure 1b) with Srivastava's longitudinal axis (axis of left-most piping 38 of 12; Figure 1b) being substantially vertical – claim 45,49. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) wherein Srivastava's structure (interface box between 34 and 38; Figure 1b) comprises a projection on Srivastava's body (10b; Figure 1b; column 3; lines 20-44) - claim 50. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) wherein Srivastava's structure (interface box between 34 and 38; Figure 1b) comprises a projection on Srivastava's body (10b; Figure 1b; column 3; lines 20-44) – claim 56. Srivastava's manifold

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assembly (12; Figure 1b; column 3; lines 20-44) wherein Srivastava's structure (interface box between 34 and 38; Figure 1b) comprises a projection on Srivastava's body (10b; Figure 1b; column 3; lines 20-44) – claim 59. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) wherein Srivastava's plenum chamber (inherent - needed to convey gases in 38) purge gas inlet (sixth, from top to bottom, gas stream feeding into Srivastava's body) is on Srivastava's longitudinal axis (axis of left-most piping 38 of 12; Figure 1b) – claim 61.

Srivastava does not teach:

- i. A reactive precursor feeding manifold assembly (12; Figure 1b; column 3; lines 20-44), comprising; an elongate body (10b; Figure 1b; column 3; lines 20-44) comprising an elongate plenum chamber (inherent - needed to convey gases in 38), Srivastava's plenum chamber (inherent - needed to convey gases in 38) having a longitudinal axis (axis of left-most piping 38 of 12; Figure 1b), Srivastava's plenum chamber (inherent - needed to convey gases in 38) having a first longitudinal axis end (bottom of left-most piping 38; Figure 1b) and a second longitudinal axis end (top of left-most piping 38; Figure 1b); Srivastava's plenum chamber (inherent - needed to convey gases in 38) comprising a plurality of precursor inlets (gas feeding connections to left-most pipe 38; Figure 1b) received along Srivastava's longitudinal axis (axis of left-most piping 38 of 12; Figure 1b); respective precursor feed streams (any of Srivastava's first five, from top to bottom, gas streams feeding into Srivastava's body) on Srivastava's body (10b; Figure 1b; column 3; lines 20-44) feeding to Srivastava's plenum chamber (inherent - needed to convey gases in 38) precursor inlets (gas feeding connections to left-most pipe 38; Figure 1b), Srivastava's respective precursor feed streams (any of Srivastava's first five, from

top to bottom, gas streams feeding into Srivastava's body) including an elongated segment (piping for gas feeding connections to left-most pipe 38; Figure 1b) extending from the single-inlet valve (any one of 36; Figure 1b) to and joining with its plenum chamber (inherent - needed to convey gases in 38) precursor inlet and which is entirely oriented substantially normal to Srivastava's longitudinal axis (axis of left-most piping 38 of 12; Figure 1b); respective multi-inlet valves positioned proximate Srivastava's body (10b; Figure 1b; column 3; lines 20-44) in Srivastava's respective precursor feed streams (any of Srivastava's first five, from top to bottom, gas streams feeding into Srivastava's body), the respective multi-inlet valves having at least two valve inlets and at least one valve outlet, one of the valve inlets being configured for connection with a reactive precursor source, another of the valve inlets being configured for connection with a purge gas line; a purge gas inlet (sixth, from top to bottom, gas stream feeding into Srivastava's body) to Srivastava's plenum chamber (inherent - needed to convey gases in 38) at Srivastava's first longitudinal axis end (bottom of left-most piping 38; Figure 1b) and upstream of all precursor inlets (gas feeding connections to left-most pipe 38; Figure 1b) to Srivastava's plenum chamber (inherent - needed to convey gases in 38); a purge gas stream (sixth, from top to bottom, gas stream feeding into Srivastava's body) on Srivastava's body (10b; Figure 1b; column 3; lines 20-44) feeding to Srivastava's purge gas inlet (sixth, from top to bottom, gas stream feeding into Srivastava's body) through a single-inlet valve (any one of 36; Figure 1b), Srivastava's purge gas stream (sixth, from top to bottom, gas stream feeding into Srivastava's body) including an elongated segment (piping for gas feeding connections to left-most pipe 38; Figure 1b) joining with

- Srivastava's purge gas inlet (sixth, from top to bottom, gas stream feeding into Srivastava's body) and which is substantially aligned on Srivastava's longitudinal axis (axis of left-most piping 38 of 12; Figure 1b); and Srivastava's body (10b; Figure 1b; column 3; lines 20-44) comprising a plenum chamber outlet (outlet portion, not labeled, of Srivastava's body) at Srivastava's second longitudinal axis end (top of left-most piping 38; Figure 1b) configured to connect with a substrate processing chamber (16; Figure 1b), the respective multi-inlet valves when the body (10b; Figure 1b; column 3; lines 20-44) is so mounted all being totally received within peripheral lateral confines of said chamber housing of the substrate processing chamber (16; Figure 1b) - claim 45
- ii. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) of claim 45 wherein the multi-inlet valves have only two inlets and only one outlet, as claimed by claim 46
  - iii. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) of claim 45 wherein Srivastava's structure (interface box between 34 and 38; Figure 1b) comprises a flange, as claimed by claim 51
  - iv. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) of claim 45 wherein Srivastava's plenum chamber (inherent - needed to convey gases in 38) purge gas inlet (sixth, from top to bottom, gas stream feeding into Srivastava's body) is on Srivastava's longitudinal axis (axis of left-most piping 38 of 12; Figure 1b), as claimed by claim 54
  - v. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) of claim 45 wherein, the multi-inlet valves have only two inlets and only one outlet; Srivastava's

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another valve (any one of 36; Figure 1b) inlet is upstream of Srivastava's one valve (any one of 36; Figure 1b) inlet; and Srivastava's plenum chamber (inherent - needed to convey gases in 38) purge gas inlet (sixth, from top to bottom, gas stream feeding into Srivastava's body) is on Srivastava's longitudinal axis (axis of left-most piping 38 of 12; Figure 1b), as claimed by claim 55

- vi. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) of claim 55 wherein Srivastava's structure (interface box between 34 and 38; Figure 1b) comprises a flange, as claimed by claim 57
- vii. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) of claim 45 wherein, the multi-inlet valves have only two inlets and only one outlet; Srivastava's another valve (any one of 36; Figure 1b) inlet is upstream of Srivastava's one valve (any one of 36; Figure 1b) inlet; and Srivastava's structure (interface box between 34 and 38; Figure 1b) being configured to mount Srivastava's body (10b; Figure 1b; column 3; lines 20-44) to a substrate processing chamber (16; Figure 1b) with Srivastava's longitudinal axis (axis of left-most piping 38 of 12; Figure 1b) being substantially vertical, as claimed by claim 58
- viii. Srivastava's manifold assembly (12; Figure 1b; column 3; lines 20-44) of claim 58 wherein Srivastava's structure (interface box between 34 and 38; Figure 1b) comprises a flange, as claimed by claim 60

Onda teaches:

- ix. A reactive precursor feeding manifold assembly (40; Figure 3), comprising: an elongate body (41a; Figure 3) comprising an elongate plenum chamber (inherent - needed to

convey gases in 41a), Onda's plenum chamber (inherent - needed to convey gases in 41a) having a longitudinal axis (axis of 41a; Figure 3), Onda's plenum chamber (inherent - needed to convey gases in 41a) having a first longitudinal axis end (bottom 41a; Figure 3) and a second longitudinal axis end (top of 41a; Figure 3); Onda's plenum chamber (inherent - needed to convey gases in 41a) comprising a single inlet received along Onda's longitudinal axis (axis of 41a; Figure 3); respective precursor feed streams (70/71; Figure 2) on Onda's body (41a; Figure 3) feeding to Onda's plenum chamber (inherent - needed to convey gases in 41a) precursor inlet, Onda's respective precursor feed streams (70/71; Figure 2) including an elongated segment (piping for gas feeding connections to 70/71; Figure 3) extending from the single-inlet valve (v57; Figure 2) to and joining with its plenum chamber (inherent - needed to convey gases in 41a) precursor inlet and which is oriented substantially normal to Onda's longitudinal axis (axis of 41a; Figure 3); respective multi-inlet valve (V49; Figure 3) positioned proximate Onda's body (41a; Figure 3) in Onda's respective precursor feed streams (70/71; Figure 2), the respective multi-inlet valve (V49; Figure 3) having at least two valve inlets and at least one valve outlet, one of the valve inlets being configured for connection with a reactive precursor source (50; Figure 2), another of the valve inlets being configured for connection with a purge gas line; a purge gas inlet to Onda's plenum chamber (inherent - needed to convey gases in 41a) at Onda's first longitudinal axis end (bottom 41a; Figure 3) and upstream of all precursor inlet 49; Figure 3) to Onda's plenum chamber (inherent - needed to convey gases in 41a); Onda's purge gas stream including an elongated segment (piping for gas feeding connections to 70/71; Figure 3) joining with Onda's purge gas

inlet and which is substantially aligned on Onda's longitudinal axis (axis of 41a; Figure 3); and Onda's body (41a; Figure 3) comprising a plenum chamber outlet (outlet portion, not labeled, of Onda's body) at Onda's second longitudinal axis end (top of 41a; Figure 3) configured to connect with a processing chamber (below 41a; Figure 3) - claim 45. Applicant's claim of gas identity as being "purge gas" or "precursor gas" is a claim requirement of intended use of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

- x. Onda's manifold assembly (40; Figure 3) of claim 45 wherein the multi-inlet valve (V49; Figure 3) have only two inlets and only one outlet, as claimed by claim 46
- xi. Onda's manifold assembly (40; Figure 3) of claim 48 wherein Onda's structure (41a/41b interface; Figure 3) comprises a flange, as claimed by claim 51
- xii. Onda's manifold assembly (40; Figure 3) of claim 45 further comprising structure (41a/41b interface; Figure 3) on Onda's body (41a; Figure 3) configured to mount Onda's body (41a; Figure 3) to a processing chamber (below 41a; Figure 3) with Onda's plenum chamber outlet (outlet portion, not labeled, of Onda's body) proximate to and connected with a processing chamber inlet (42; Figure 3), the respective multi-inlet valve (V49;

- Figure 3) when Onda's body (41a; Figure 3) is so mounted being at least partially received within peripheral lateral confines of a chamber housing of Onda's processing chamber (below 41a; Figure 3), as claimed by claim 52
- xiii. Onda's manifold assembly (40; Figure 3) of claim 52 wherein the multi-inlet valve (V49; Figure 3) when Onda's body (41a; Figure 3) is so mounted are totally received within peripheral lateral confines of said chamber housing of the substrate processing chamber (below 41a; Figure 3), as claimed by claim 53
- xiv. Onda's manifold assembly (40; Figure 3) of claim 45 wherein Onda's plenum chamber (inherent - needed to convey gases in 41a) purge gas inlet is on Onda's longitudinal axis (axis of 41a; Figure 3), as claimed by claim 54
- xv. Onda's manifold assembly (40; Figure 3) of claim 45 wherein, the multi-inlet valve (V49; Figure 3) have only two inlets and only one outlet - claim 55
- xvi. Onda's manifold assembly (40; Figure 3) of claim 55 further comprising structure (41a/41b interface; Figure 3) on Onda's body (41a; Figure 3) configured to mount Onda's body (41a; Figure 3) to a processing chamber (below 41a; Figure 3) with Onda's plenum chamber outlet (outlet portion, not labeled, of Onda's body) proximate to and connected with a processing chamber inlet (42; Figure 3), and wherein Onda's structure (41a/41b interface; Figure 3) comprises a flange, as claimed by claim 57
- xvii. Onda's manifold assembly (40; Figure 3) of claim 45 wherein, the multi-inlet valve (V49; Figure 3) have only two inlets and only one outlet; structure (41a/41b interface; Figure 3) on Onda's body (41a; Figure 3) configured to mount Onda's body (41a; Figure 3) to a processing chamber (below 41a; Figure 3) with Onda's plenum chamber outlet (outlet

portion, not labeled, of Onda's body) proximate to and connected with a processing chamber inlet (42; Figure 3), Onda's structure (41a/41b interface; Figure 3) being configured to mount Onda's body (41a; Figure 3) to a processing chamber (below 41a; Figure 3) with Onda's longitudinal axis (axis of 41a; Figure 3) being substantially vertical, as claimed by claim 58

- xviii. Onda's manifold assembly (40; Figure 3) of claim 58 wherein Onda's structure (41a/41b interface; Figure 3) comprises a flange, as claimed by claim 60

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make integral any of Srivastava's valves (any one of 36; Figure 1b) with Onda's 3-way valve (V49; Figure 3) and add a flange portion to Srivastava's body (10b; Figure 1b; column 3; lines 20-44) as taught by Onda.

Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the Srivastava's pipe lengths such that Onda's respective multi-inlet valves (V49; Figure 3) when Srivastava's body (10b; Figure 1b; column 3; lines 20-44) is so mounted all being totally received within peripheral lateral confines of said chamber housing of Srivastava's substrate processing chamber (16; Figure 1b)

Motivation to make integral any of Srivastava's valves with Onda's 3-way valve is for reducing material costs by combining three valves into one, while motivation to add a flange portion to Srivastava's body as taught by Onda is for creating a hermetic seal between Srivastava's body and Srivastava's processing chamber and the exterior environment as taught by Onda (column 7; lines 54-61). Further, it is established that the use of a one piece construction instead of

interconnected components is obvious (In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965), MPEP 2144.04).

It is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinchart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04)

***Response to Arguments***

3. Applicant's arguments filed July 1, 2008 have been fully considered but they are not persuasive.

4. Applicant states:

“

Shrivastava discloses piping having a plurality of valves connected to feed streams leading to the alleged plenum chamber, at least a portion of which are all parallel to each other (see Fig. 1 b). Shrivastava's most upstream valve is connected to feed stream piping that has a portion aligned with the longitudinal axis of the region of piping the Examiner has defined as the plenum chamber (attachment to the Examiner's Answer), and a portion that is normal to such axis (Fig. 1b). Shrivastava does not disclose or suggest the claim 45 recited most upstream elongate segment that is aligned entirely on the longitudinal axis and aligned normal to a plurality of other elongate segments.

“

5. The Examiner disagrees. Shrivastava's elongated segment (piping for gas feeding connections to left-most pipe 38; Figure 1b) is aligned entirely on the longitudinal axis

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(horizontal axis of figure) and aligned normal (vertical axis of figure) to a plurality of other elongate segments (vertical portions for piping for gas feeding connections to left-most pipe 38; Figure 1b).

6. Applicant states:

“

Onda discloses a first valve (most upstream) connected to a segment that is aligned on a longitudinal axis, and a second valve that is oriented at an angle other than 90 degrees relative to the longitudinal axis. Onda does not disclose or suggest the claim 45 recited most upstream elongate segment entirely substantially aligned with the longitudinal axis and perpendicular to a plurality of other elongate segments that are received along the longitudinal axis.

“

7. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant states:

“

In order to establish a direct connection as recited in claim 45, Shrivastava's microwave power generator would need to be eliminated.

“

In response, the Examiner disagrees. The Examiner's BPAI-affirmed grounds of rejection are specifically states it would ... *to make integral any of Shrivastava's valves* (any one of 36; Figure

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1b) with Onda's 3-way valve (V49; Figure 3) *and add a flange portion to Srivastava's body* (10b; Figure 1b; column 3; lines 20-44) as taught by Onda.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1792 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

/Rudy Zervigon/

Primary Examiner, Art Unit 1792